

AMENDMENTS

Amendments to the Claims

The listing of claims presented below will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (currently amended): A microfluidic flow cell for removably interfacing with a removable-member for performing a reaction therebetween, said microfluidic flow cell comprising:

an elongated body defining opposite front and rear ends and opposite lateral sides;

at least one reaction portion formed at least near said front end and defining with the removable-member a reaction chamber when said microfluidic flow cell and said removable-member are in an interfaced position thereof;

at least ~~one~~ two fluid-receiving portion portions positioned at least near said rear end for receiving a fluid therein and being in fluid communication with said reaction chamber;

a common channel positioned generally centrally of said elongated body and in fluid communication with said reaction chamber;

at least two separate conduits being in fluid communication with said common channel and extending therefrom towards a respective one of said opposite lateral sides, each said conduit being in fluid communication with a respective one of said at least two fluid-receiving portions; and

a dispensing portion in fluid communication with said reaction chamber, and with the external environment of said microfluidic flow cell, said dispensing portion comprising a dispensing channel formed within said microfluidic flow cell;

wherein when in said interfaced position, said microfluidic flow cell is adapted to allow for the fluid in said fluid-receiving portion to flow to

said reaction chamber and for excess fluid in said reaction chamber to flow into the external environment via said dispensing portion.

Claim 2 (cancelled)

Claim 3 (cancelled)

Claim 4 (cancelled)

Claim 5 (currently amended): A microfluidic flow cell according to ~~claim 4~~ claim 1, wherein said plurality of separate conduits meet at a valve for fluid communication therewith, said valve being in fluid communication with said common reaction chamber.

Claim 6 (cancelled)

Claim 7 (original): A microfluidic flow cell according to claim 1, wherein said reaction portion comprises a reaction cavity.

Claim 8 (original): A microfluidic flow cell according to claim 7, wherein said cavity comprises a structure selected from the group consisting of indentations and at least one groove.

Claim 9 (original): A microfluidic flow cell according to claim 1, wherein said fluid-receiving portion comprises a reagent chamber, said fluid comprising a reagent.

Claim 10 (original): A microfluidic flow cell according to claim 1, wherein said fluid-receiving portion comprises a fluid-receiving chamber formed within said microfluidic flow cell.

Claim 11 (original): A microfluidic flow cell according to claim 1, wherein said fluid-receiving portion comprises a fluid-receiving cavity defining a fluid-receiving chamber with said removable-member when said microfluidic flow cell and said removable-member are in said interfaced position.

Claim 12 (original): A microfluidic flow cell according to claim 2, wherein said conduit is formed within said microfluidic flow cell.

Claim 13 (original): A microfluidic flow cell according to claim 2 further comprising a conduit cavity, said conduit-cavity defining said conduit when said microfluidic flow cell and said removable-member are in said interfaced position.

Claim 14 (original): A microfluidic flow cell according to claim 3, wherein said at least one of said plurality of conduits is formed within said microfluidic flow cell.

Claim 15 (original): A microfluidic flow cell according to claim 3, wherein at least one of said plurality of conduits is defined by a conduit in said microfluidic flow cell when said microfluidic flow cell and said removable member are in said interfaced position.

Claim 16 (original): A microfluidic flow cell according to claim 5, wherein said valve is formed within said microfluidic flow cell.

Claim 17 (previously presented): A microfluidic flow cell according to claim 5 further comprising a valve cavity, said valve cavity defining said valve when said microfluidic flow cell and said removable-member are in said interfaced position.

Claim 18 (original): A microfluidic flow cell according to claim 6, where said common channel is formed within said microfluidic flow cell.

Claim 19 (original): A microfluidic flow cell according to claim 18, further comprising a common channel-cavity, said common channel-cavity defining said common channel when said microfluidic flow cell and said removable-member are in said interfaced position.

Claim 20 (original): A microfluidic flow cell according to claim 1, further comprising a plurality of separate fluid-receiving portions, each said fluid-receiving portion of said plurality being in fluid communication with a common channel, said common channel being in communication with said reaction chamber.

Claim 21 (original): A microfluidic flow cell according to claim 20, wherein each said separate fluid-receiving portions comprises a pair of elongate bores meeting at a common part of said common channel.

Claim 22 (original): A microfluidic flow cell according to claim 21, wherein said common part comprises a valve.

Claim 23 (original): A microfluidic flow cell according to claim 20, wherein said common channel is formed within said microfluidic flow cell.

Claim 24 (original): A microfluidic flow cell according to claim 20, further comprising a common channel-cavity, said common channel-cavity defining said common channel when said microfluidic flow cell and said removable-member are in said interfaced position.

Claim 25 (original): A microfluidic flow cell according to claim 21 wherein said pair of elongate bores are formed within said microfluidic flow cell.

Claim 26 (original): A microfluidic flow cell according to claim 21, wherein said elongate bored are formed by complementary elongate bore portions defined by said microfluidic flow cell and said removable-member when in said interfaced position.

Claim 27 (original): A microfluidic flow cell according to claim 22, wherein said valve is formed within said microfluidic flow cell.

Claim 28 (previously presented): A microfluidic flow cell according to claim 22 further comprising a valve cavity, said valve cavity defining said valve when said microfluidic flow cell and said removable-member are in said interfaced position.

Claim 29: (cancelled)

Claim 30 (original): A microfluidic flow cell according to claim 1, wherein said dispensing portion comprises a dispensing channel, said microfluidic flow cell further comprising a dispensing channel-cavity, said dispensing channel-cavity defining said dispensing channel when said microfluidic flow cell and said removable-member are in said interfaced position.

Claim 31 (original): A microfluidic flow cell according to claim 1, wherein said microfluidic flow cell comprises hydrophobic material.

Claim 32 (original): A microfluidic flow cell according to claim 1, wherein said microfluidic flow cell comprises a substrate.

Claim 33 (original): A microfluidic flow cell according to claim 32, wherein said substrate comprises elastomeric material.

Claim 34 (original): A microfluidic flow cell according to claim 33, wherein said elastomeric material comprises PDMS.

Claim 35 (original): A microfluidic flow cell according to claim 1, wherein said removable-member comprises a support for performing a reaction thereon.

Claim 36 (original): A microfluidic flow cell according to claim 35, wherein said support comprises hydrophobic material.

Claim 37 (original): A microfluidic flow cell according to claim 35, wherein said support is functionalized to allow for the binding of probes thereon.

Claim 38 (original): A microfluidic flow cell according to claim 35, wherein said support comprises glass.

Claim 39 (original): A microfluidic flow cell according to claim 1, wherein said support comprises a microarray.

Claim 40 (original): A microfluidic flow cell according to claim 39, wherein said microarray comprises bioprobe spots.

Claim 41 (cancelled)

Claim 42 (original): A microfluidic flow cell according to claim 39 further comprising a plurality of fluid-receiving portions and a plurality of channels in fluid communication therewith, said channels being in communication with said reaction chamber.

Claim 43 (original): A microfluidic flow cell according to claim 42, wherein said plurality of channels access individual spots of said microarray.

Claim 44 (original): A microfluidic flow cell according to claim 42, wherein said plurality of channels access individual groups of spots of said microarray.

Claim 45 (original): A microfluidic flow cell according to claim 1, wherein said removable-member comprises an enclosure.

Claim 46 (original): A microfluidic flow cell according to claim 45, wherein said enclosure comprises a removable seal.

Claim 47 (previously presented): A microfluidic flow cell according to claim 1 being adapted to be submitted to centrifugal forces so as to provide for the fluid in said fluid-receiving portion to flow to said reaction chamber.

Claims 48 – 49 (cancelled)

Claim 50 (original): A microfluidic flow cell according to claim 1 further comprising at least one vent, said vent being in fluid communication with the ambient environment and with said reaction chamber.

Claim 51 (original): A microfluidic flow cell according to claim 1 further comprising at least one vent, said vent being in fluid communication with the ambient environment and with said fluid-receiving portion.

Claim 52 (original): A microfluidic flow cell according to claim 2, further comprising at least one vent, said vent being in fluid communication with the ambient environment and with said conduit.

Claim 53 (original): A microfluidic flow cell according to claim 5, further comprising at least one vent, said vent being in fluid communication with the ambient environment and with said valve.

Claim 54 (original): A microfluidic flow cell according to claim 18, further comprising at least one vent, said vent being in fluid communication with the ambient environment and with said common channel.

Claim 55 (original): A microfluidic flow cell according to claim 20, further comprising at least one vent, said vent being in fluid communication with the ambient environment and with said common channel.

Claim 56 (original): A microfluidic flow cell according to claim 1, further comprising at least one vent, said vent being in fluid communication with the ambient environment and with said dispensing portion.

Claim 57 (previously presented): A microfluidic flow cell according to claim 1, wherein said removable member comprises an ~~auxiliary~~ a microfluidic flow cell.

Claim 58 (previously presented): A microfluidic flow cell according to claim 1, wherein said removable-member comprises a support comprising a support cavity defining said reaction chamber when in said interfacing position.

Claims 59 – 141 (cancelled)